REMARKS/ARGUMENT

Claim 4 has been amended better to define the claimed invention and overcome the 35 U.S.C. 112, second paragraph, rejection.

Claim 28 has been amended better to define the claimed invention and overcome the 35 U.S.C. 112, second paragraph, rejection. Applicant traverses Examiner's determination there is no antecedent basis for "the" in "the sequence". Antecedent support is located on lines 5-6 of Claim 28 which recites, "a plurality of peak detection and cancellation circuits arranged in a sequence ...". Accordingly, the 35 U.S.C. 112, second paragraph, rejection is overcome.

Claims 8, 10, 22, 23 and 34, objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, have been so amended. Applicant does note that he further deleted the last two lines of Claim 28 which refer to "the interpolator", since there is no antecedent basis for this (not introduced until Claim 31). Deletion of the two lines, however, does not affect the patentability of Claim 28. Accordingly, Claims 8, 10, 22, 23 and 34 stand allowable.

1) Claims 1, 4, 5, 9, 11, 15, 18, 19, 24 and 25 are rejected under 35 U.S.C. 102(a) as being anticipated by Hunton et al. (U.S. 2002/0006169). Applicant respectfully traverses this rejection, as set forth below.

In order that the rejection of Claims 1, 4, 5, 9, 11, 15, 18, 19, 24 and 25 be sustainable, it is fundamental that "each and every element as set forth in the claim

be found, either expressly or inherently described, in a single prior art reference." *Verdegall Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also, *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), where the court states, "The identical invention must be shown in as complete detail as is contained in the ... claim".

Furthermore, "all words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Independent Claim 1 requires and positively recites, an integrated circuit for compressing peak sample values in spread spectrum signals, comprising: "a plurality of peak detection and cancellation circuits arranged in a sequence, a first peak detection and cancellation circuit having an input coupled to receive a spread spectrum symbol stream, at least a second peak detection and cancellation circuit having an input coupled to the output of a preceding peak detection and cancellation circuit in the sequence, **each peak detection and cancellation circuit for applying a cancellation pulse to a received symbol stream** responsive to detecting a peak amplitude in the received symbol stream exceeding a threshold, and for presenting a compressed symbol stream including the received symbol stream and cancellation pulse at its output".

Independent Claim 15 requires and positively recites, a method of transmitting a spread spectrum communications signal, comprising the steps of: "**applying at least one peak compression pulse to the spread spectrum signal at a first peak sample point**, the magnitude of the signal at the first peak sample point exceeding a peak qualifying threshold, to produce a peak-compressed symbol stream", "repeating, at least once, the applying step on the peak-

compressed symbol stream", "amplifying an analog modulated signal corresponding to a peak-compressed symbol stream from the last of the repeated applying steps to produce the signal to be transmitted".

In contrast, Hunton discloses a system and method for signal peak reduction in a multiple carrier communication system where the individual carriers are produced from input symbols that are filtered to reduce individual carrier bandwidths, offset in frequency, and combined into an output signal. A multiple carrier peak reduction unit is provided which modifies the input carrier symbols to that the combined output signal does not exceed a predetermined peak limit value (Abstract, lines 1-8). Hutton goes on to discloses an embodiment of his peak reduction circuit in FIG. 4 (col. 10, lines 19-43) and further discloses filter predictions $sp_{k,m}$ and $ws_{k,m}$ and how his peak reduction algorithm circuit calculated adjustment values (col. 10, lines 44-55). But nowhere does Hunton teach or suggest the concept that a "cancellation pulse" is applied to the "received signal stream".

Accordingly, Hunton fails to teach or suggest, "a plurality of peak detection and cancellation circuits arranged in a sequence, a first peak detection and cancellation circuit having an input coupled to receive a spread spectrum symbol stream, at least a second peak detection and cancellation circuit having an input coupled to the output of a preceding peak detection and cancellation circuit in the sequence, **each peak detection and cancellation circuit for applying a cancellation pulse to a received symbol stream** responsive to detecting a peak amplitude in the received symbol stream exceeding a threshold, and for presenting a compressed symbol stream including the received symbol stream and cancellation pulse at its output", as required by Claim 1 OR "**applying at least one peak compression pulse to the spread spectrum signal at a first peak**

sample point, the magnitude of the signal at the first peak sample point exceeding a peak qualifying threshold, to produce a peak-compressed symbol stream", as required by Claim 15. In the event Examiner maintains this rejection, Applicant requests that Examiner specifically identify any such teaching in his next Office Action.

In light of the above it is clear that Hunton does not teach all of the elements of Claim 1 and 15. Accordingly, the 35 U.S.C. 102(a) rejection is improper and must be withdrawn.

Claims 4, 5, 9, 11, 18, 19, 24 and 25 depend, directly or indirectly, from Claims 1 and 15 and are allowable for the same reasons set forth above in support of the allowance of these claims.

Claim 4 further defines the integrated circuit of claim 1, wherein at least one of the plurality of peak detection and cancellation circuits comprises: "a peak detector circuit, for identifying a peak location and a filter value corresponding to an amplitude at the peak location wherein the cancellation circuit produces the cancellation pulse corresponding to the identified peak location and the corresponding filter value", "a delay stage for delaying the received symbol stream" and "an adder, for combining the delayed received symbol stream and the cancellation pulse". Claim 4 depends from Claim 1 and stands allowable for the same reasons set forth above in support of the allowability of Claim 1.

Claim 5 further defines the integrated circuit of claim 4, wherein the peak detector circuit comprises "an interpolating circuit, for generating a curve-fitting estimate of values near a sample point", "an evaluation circuit, for determining the peak location from the curve-fitting estimate", "a value computation circuit,

for evaluating the amplitude at the peak location", "a qualifier, for comparing the evaluated amplitude against a threshold value" and "a filter generator, for producing the filter value from the evaluated amplitude". Claim 5 depends from Claim 4 and stands allowable for the same reasons set forth above in support of the allowability of Claim 4.

Claim 9 further defines the integrated circuit of claim 5, wherein the qualifier is also for issuing a qualifying signal for a first sample point responsive to the evaluated amplitude of the first sample point exceeding a threshold value in combination with no subsequent sample points in a selected interval having a larger evaluated amplitude than that of the first sample point. Claim 9 depends from Claim 5 and stands allowable for the same reasons set forth above in support of the allowability of Claim 5.

Claim 11 further defines the integrated circuit of claim 10, wherein each of the plurality of cancellation pulse generators comprises: "a look-up table memory for storing a plurality of FIR pulse coefficients", "computational circuitry, coupled to the look-up table memory and to the peak detector circuit, for producing a data stream corresponding to the combination of the FIR pulse coefficients with an offset corresponding to the peak location" and "gain scaling circuitry, for scaling the data stream responsive to the filter value from the filter generator of the peak detector circuit". Claim 11 depends from Claim 10 and stands allowable for the same reasons set forth above in support of the allowability of Claim 10.

Claim 18 further defines the method of claim 15, wherein each applying step comprises: "identifying a peak location and a filter value corresponding to an amplitude at a peak location in the signal", "producing a cancellation pulse

corresponding to the identified peak location and the corresponding filter value", "delaying the spread spectrum signal to match the peak location" and "combining the delayed received signal and the cancellation pulse". Claim 18 depends from Claim 15 and stands allowable for the same reasons set forth above in support of the allowability of Claim 15.

Claim 19 further defines the method of claim 18, wherein the identifying step comprises: "generating a curve-fitting estimate over a delay interval near a sample point", "determining the peak location within the delay interval from the curve-fitting estimate", "evaluating the amplitude at the determined peak location", "comparing the evaluated amplitude against a peak qualifying threshold" and "producing the filter value responsive to the evaluated amplitude". Claim 19 depends from Claim 18 and stands allowable for the same reasons set forth above in support of the allowability of Claim 18.

Claim 24 further defines the method of claim 18, wherein the step of producing a cancellation pulse is performed within each applying step simultaneously for a plurality of identified peak locations in the symbol stream. Claim 24 depends from Claim 18 and stands allowable for the same reasons set forth above in support of the allowability of Claim 18.

Claim 25 further defines the method of claim 18, wherein the step of producing a cancellation pulse comprises: "accessing a look-up table memory to retrieve FIR pulse coefficients", "combining the FIR pulse coefficients with an offset corresponding to the peak location to produce a data stream" and "gain scaling the data stream responsive to the filter value". Claim 25 depends from Claim 18 and stands allowable for the same reasons set forth above in support of

the allowability of Claim 18.

2) 35 U.S.C. 103(a) rejections of Claims 2, 3, 6, 7, 12, 15, 16, 17, 20, 21, 26, 27:

Claim 2 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton (US 2002/0006169) in view of Hunton (hereinafter Hunton2 US 2002/0196839) in view of Hongo et al. (US 6931239).

Claims 3 & 17 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton (US 2002/0006169) in view of Hunton (hereinafter Hunton2 US 2002/0196839) in view of Rakib et al. (US 6426983).

Claims 6 & 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton (US 2002/0006169) in view of Hunton (hereinafter Hunton2 US 2002/0196839) in view of Allpress et al. (US 6496546).

Claims 7 & 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton (US 2002/0006169) in view of Muegge et al. (US 2004/0052095).

Claims 12, 13, 26 & 27 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton (US 2002/0006169).

Claim 16 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton (US 2002/0006169) in view of Hunton (hereinafter Hunton2 US 2002/0196839).

In proceedings before the Patent and Trademark Office, "the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art". *In re Fritch*, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (citing *In re Piasecki*, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984). "The Examiner can satisfy this burden **only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references**", *In re Fritch*, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992)(citing *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988)(citing *In re Lalu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1988)).

Similarly, "obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, **absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined ONLY if there is some suggestion or incentive to do so.**" *ACS Hosp. Systems, Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984).

Similarly, although couched in terms of combining teachings found in the prior art, the same inquiry must be carried out in the context of a purported obvious "modification" of the prior art. **The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.** *In re Gordon*, 733 F.2d at 902, 221 USPQ at 1127. Moreover, **it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious.** *In re Gorman*, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed.Cir.1991). See also

Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1138, 227 USPQ 543, 547 (Fed.Cir.1985).

Furthermore, "all words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Hunton (US 2002/0006169) is the primary reference cited in all of the 35 U.S.C. 103(a) rejections. Any inadequacy in Hunton similarly impacts all of the 35 U.S.C. 103(a) rejections. Rather than repeat the same arguments over and over again, Applicant respectfully points out the following deficiency in Hunton which is applicable to all the rejections.

Hunton discloses a system and method for signal peak reduction in a multiple carrier communication system where the individual carriers are produced from input symbols that are filtered to reduce individual carrier bandwidths, offset in frequency, and combined into an output signal. A multiple carrier peak reduction unit is provided which modifies the input carrier symbols to that the combined output signal does not exceed a predetermined peak limit value (Abstract, lines 1-8). Hutton goes on to discloses an embodiment of his peak reduction circuit in FIG. 4 (col. 10, lines 19-43) and further discloses filter predictions $sp_{k,m}$ and $ws_{k,m}$ and how his peak reduction algorithm circuit calculated adjustment values (col. 10, lines 44-55). But nowhere does Hunton teach or suggest the concept that a "cancellation pulse" is applied to the "received signal stream".

Accordingly, Hunton fails to teach or suggest, "a plurality of peak detection and cancellation circuits arranged in a sequence, a first peak detection

and cancellation circuit having an input coupled to receive a spread spectrum symbol stream, at least a second peak detection and cancellation circuit having an input coupled to the output of a preceding peak detection and cancellation circuit in the sequence, **each peak detection and cancellation circuit for applying a cancellation pulse to a received symbol stream** responsive to detecting a peak amplitude in the received symbol stream exceeding a threshold, and for presenting a compressed symbol stream including the received symbol stream and cancellation pulse at its output", as required by Claim 1 (claim from which Claims 2, 3, 6, 7, 12 and 13 depend directly or indirectly) OR "**applying at least one peak compression pulse to the spread spectrum signal at a first peak sample point**, the magnitude of the signal at the first peak sample point exceeding a peak qualifying threshold, to produce a peak-compressed symbol stream", as required by Claim 15 (claim from which Claims 16, 17, 20, 21, 26 and 27 depend directly or indirectly). In the event Examiner maintains this rejection, Applicant requests that Examiner specifically identify any such teaching in his next Office Action.

Irregardless of whatever else Hunton2 US 2002/0196839, Hongo et al. (US 6931239), Rakib et al. (US 6426983), Allpress et al. (US 6496546) and/or Muegge et al. (US 2004/0052095) teach or suggest, none of these references teach or suggest the above identified deficiency of Hunton (US 2002/0006169). As such, no combination of Hunton (US 2002/0006169) with any of the additionally cited references teach or suggests the limitations of Claims 2, 3, 6, 7, 12, 15, 16, 17, 20, 21, 26, 27, or Claims 1 and 15 from which they depend. As such, the 35 U.S.C. 103(a) rejections are improper and must be withdrawn.

3) 35 U.S.C. 103(a) rejections of Claims 28-33 and 35-38:

Claims 28, 30, 31 and 35-38 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton (US 2002/0006169) in view of Hunton (hereinafter Hunton2 US 2002/0196839) in view of Motoyoshi et al. (US 2001/0055294).

Claim 29 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton (US 2002/0006169) in view of Hunton (hereinafter Hunton2 US 2002/0196839) in view of Hongo et al. (US 6931239).

Claim 32 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton (US 2002/0006169) in view of Hunton (hereinafter Hunton2 US 2002/0196839) in view of Motoyoshi (US 2001/0055294) in view of Allpress et al. (US 6496546).

Claim 33 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton (US 2002/0006169) in view of Hunton (hereinafter Hunton2 US 2002/0196839) in view of Motoyoshi (US 2001/0055294) and further view of Muegge et al. (2004/0052095).

In proceedings before the Patent and Trademark Office, "the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art". *In re Fritch*, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (citing *In re Piasecki*, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984). "The Examiner can satisfy this burden **only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references**", *In re Fritch*, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992)(citing *In re*

Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988)(citing *In re Lalu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1988)).

Similarly, "obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, **absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined ONLY if there is some suggestion or incentive to do so.**" *ACS Hosp. Systems, Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984).

Similarly, although couched in terms of combining teachings found in the prior art, the same inquiry must be carried out in the context of a purported obvious "modification" of the prior art. **The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.** *In re Gordon*, 733 F.2d at 902, 221 USPQ at 1127. Moreover, **it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious.** *In re Gorman*, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed.Cir.1991). See also *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138, 227 USPQ 543, 547 (Fed.Cir.1985).

Furthermore, "all words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Independent Claim 28 requires and positively recites a wireless base station for transmitting spread spectrum signals corresponding to a plurality of

communications channels, comprising: "at least one coder/decoder for generating a spread spectrum signal over a plurality of channels, the signal being arranged in the form of a digital symbol stream", "a plurality of peak detection and cancellation circuits arranged in a sequence, a first peak detection and cancellation circuit having an input coupled to receive the digital symbol stream, at least a second peak detection and cancellation circuit having an input coupled to the output of a preceding peak detection and cancellation circuit in the sequence, **each peak detection and cancellation circuit <u>for applying a cancellation pulse to a received symbol stream</u> responsive to detecting a peak amplitude in the received symbol stream exceeding a threshold**, and for presenting a compressed symbol stream including the received symbol stream and cancellation pulse at its output", "a digital-to-analog converter for converting the compressed symbol stream to an analog signal", "modulation circuitry for producing a modulated signal, corresponding to the analog signal, at a carrier frequency; and a power amplifier, for amplifying the modulated signal for transmission".

Hunton (US 2002/0006169) is the primary reference cited in all of the 35 U.S.C. 103(a) rejections. Any inadequacy in Hunton similarly impacts all of the 35 U.S.C. 103(a) rejections. Rather than repeat the same arguments over and over again, Applicant respectfully points out the following deficiency in Hunton which is applicable to all the rejections.

Hunton discloses a system and method for signal peak reduction in a multiple carrier communication system where the individual carriers are produced from input symbols that are filtered to reduce individual carrier bandwidths, offset in frequency, and combined into an output signal. A multiple carrier peak reduction unit is provided which modifies the input carrier symbols to that the

combined output signal does not exceed a predetermined peak limit value (Abstract, lines 1-8). Hutton goes on to discloses an embodiment of his peak reduction circuit in FIG. 4 (col. 10, lines 19-43) and further discloses filter predictions $sp_{k,m}$ and $ws_{k,m}$ and how his peak reduction algorithm circuit calculated adjustment values (col. 10, lines 44-55). But nowhere does Hunton teach or suggest the concept that a "cancellation pulse" is applied to the "received signal stream".

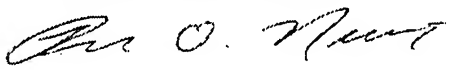
Accordingly, Hunton fails to teach or suggest, "... **each peak detection and cancellation circuit <u>for applying a cancellation pulse to a received symbol stream</u> responsive to detecting a peak amplitude in the received symbol stream exceeding a threshold**", as required by Claim 28. In the event Examiner maintains this rejection, Applicant requests that Examiner specifically identify any such teaching in his next Office Action.

Irregardless of whatever else Hunton2 US 2002/0196839, Motoyoshi (US 2001/0055294), Hongo et al. (US 6931239), Allpress et al. (US 6496546) and/or Muegge et al. (US 2004/0052095) teach or suggest, none of these references teach or suggest the above identified deficiency of Hunton (US 2002/0006169). As such, no combination of Hunton (US 2002/0006169) with any of the additionally cited references teach or suggests the limitations of Claims 28-33 or 35-38. As such, the 35 U.S.C. 103(a) rejections are improper and must be withdrawn.

In light of the above it is clear that Hunton does not teach all of the elements of Claim 1 and 15. Accordingly, the 35 U.S.C. 102(a) rejection is improper and must be withdrawn.

Objected to Claims 8, 10, 22, 23 and 34 have been amended to be in allowable form. Claims 1-8, 9, 11-21, 24-33 and 35-38 similarly stand allowable. Applicant respectfully requests withdrawal of the rejections and allowance of the application at the earliest possible date.

Respectfully submitted,



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